

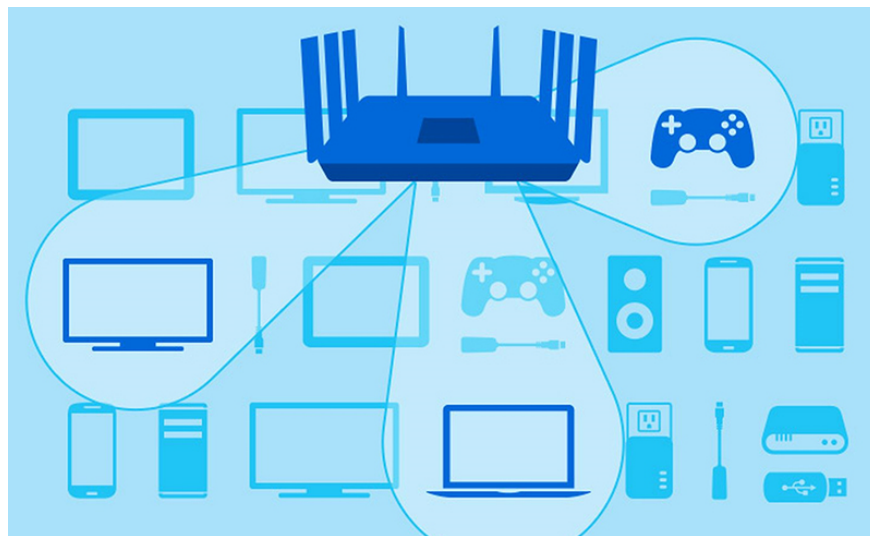
What is WiFi MIMO? WiFi MIMO What are the benefits? How Does WiFi MIMO Work?

The article provides information about WiFi MIMO technology, benefits of Wifi MIMO technology, how MIMO works, WiFi MIMO types, numbers to note about MIMO, comparison of SU-MIMO and MU-MIMO , the difference between MIMO and Beam Forming.

If there are many devices connected to 1 WiFi at the same time, it will make the data transfer speed of WiFi slower. Therefore, the speed will be slower, so to improve this situation, there is a new technology standard that significantly reduces the waiting time. In this article, I will share some information about WiFi MIMO Technology. Let's see it now!

1. What is WiFi MIMO technology?

MIMO technology stands for Multiple In, Multiple Out is a method of using multiple antennas to transmit and receive signals of a wireless connection. Helps electronic devices such as smartphones , tablets or laptops receive Wifi waves more easily and take advantage of the full capabilities of the Wifi transmitter.



2. Benefits of WiFi MIMO . Technology

- Downloads are accelerated when using devices that support WiFi MIMO.
- The data receiving time of each device is reduced to the lowest level.



- WiFi MIMO allows you to send data continuously, sending it to many devices that are connected to the network at the same time.

- Helping to raise the user experience to a new level like watching movies on laptops and surfing the web on phones.

3. How does MIMO work?

Previous Wifi technologies like SISO on a router used only one antenna on the router to connect to only one antenna on the receiving device.

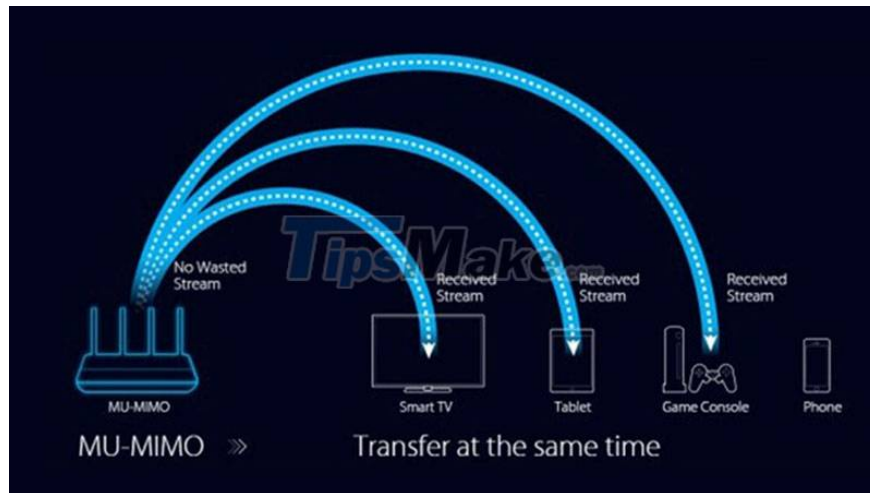


Wifi MIMO technology allows more antennas to be used in both devices to improve the reliability and speed of the signal transmitted, overcoming the limitations of obstacles encountered by older Wifi technologies. right.

4. How many types of MIMO are there?

SU-MIMO

SU stands for Single User to refer to a single user, released in 2007 with the 802.11.n Wifi standard that allows to increase Wifi speed by allowing two wireless devices to transmit and receive data at the same time. . This is a technology that allows a router to send and receive data to a device at the same time.



MU-MIMO

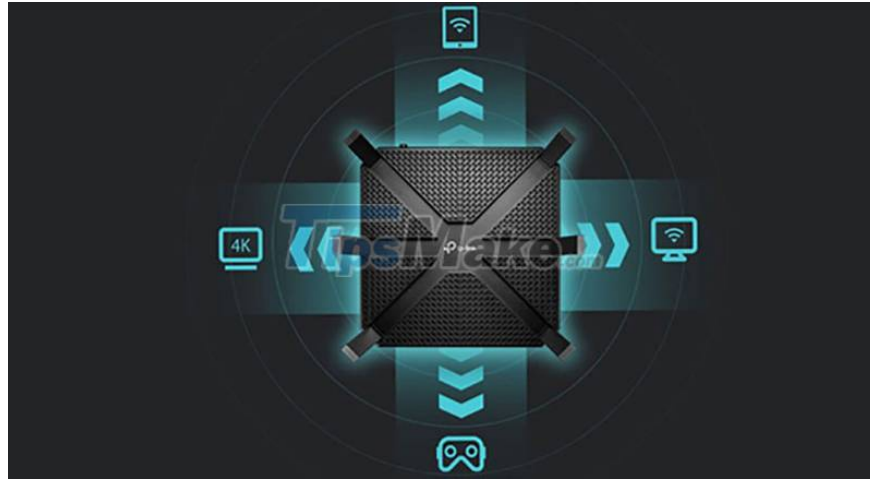
MU-MIMO technology, this technology was released in 2015 to overcome the disadvantages of SU-MIMO, with the 802.11ac Wifi standard allowing the Wifi router to interact with many devices at the same time, reducing the time each device has to wait, each device has to wait for the signal and increase the network speed.



Therefore, we can conclude that MIMO is a technology that allows to form multiple data streams between router and device, MU-MIMO allows Wifi to send multiple bursts of MIMO data to many devices at the same time.

5. Numbers to note about MIMO

When you see all the descriptions of a device using MIMO technology, it's usually followed by a few numbers like 2x2 or 3x2. The number before the x is the number of the transmitting antenna and after the x is the number of the receiving antenna.



Example: Suppose you come across a 2x2 router. This means it can transmit Wi-Fi to the outside using two antennas at the same time, and if your laptop has a 1x2 Wifi card, it can receive the full signal from both. this antenna at the same time. Your computer will only receive waves with one antenna if it is only 1x1.

6. Compare SU-MIMO and MU-MIMO

The basic difference between SU-MIMO and MU-MIMO is:

SU-MIMO sends data packets to devices one after another, not at the same time, but must wait for the transmission of this device to finish and then go to the next device. MU-MIMO sends data packets to many devices in the network at the same time, on different connections, and all devices receive the data at the same time. Unlike SU-MIMO, there is no need to wait for a replacement to be received.



MU-MIMO also helps to increase the serviceability of the network compared to SU-MIMO, ie more devices can be on the network at the same time than taking turns entering the network like SU-MIMO. And MU-MIMO also provides more consistent transmission at faster speeds.



So, according to you MU-MIMO or SU-MIMO, which technology is good. MU-MIMO will certainly become more popular, as there will be no need to switch between devices, allowing for a more constant connection. In addition, the speed of each device will increase, allowing an increase in the number of people who can use the network at the same time.

7. How is MIMO different from Beam Forming?

The term Beam Forming may appear on some modern routers. Because of its ability to direct where you sit, this technology is often referred to as a smart antenna. The router will change its broadcast power to the device based on this location data, resulting in a better signal. Meanwhile, normal Wifi emits in all directions in the form of a sphere, so it will not be very concentrated.



Beam Forming has 2 types: Explicit and Implicit. When both your router and device allow Explicit Beam Forming beam formation, laptops and phones released about 3 years ago are available. In contrast, Implicit Beam Forming is when only the router has this function, the phone does not.

Hopefully, after reading this article, you have information about WiFi MIMO technology. Thank you for following the article, see you in the next post!

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